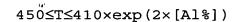
## In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1. (original) A process of production of a high strength galvannealed steel sheet comprising continuously hot-dip galvanizing a high strength steel sheet having a content of Si of 0.4 to 2.0 wt% during which making the atmosphere of the reducing zone an atmosphere containing H2 to 1 to 60 wt% and comprised of the balance of N2, H2O, O2, CO2, CO, and unavoidable impurities, controlling, in the atmosphere, the log(PCO2/PH2) of the carbon dioxide partial pressure and hydrogen partial pressure to  $log(PCO_2/PH_2) \le -0.5$ , the log(PCO<sub>2</sub>/PH<sub>2</sub>) of the water partial pressure and hydrogen partial pressure to  $log(PH_2O/PH_2) \le -0.5$ , and the  $log(P_T/PH_2)$  of the total partial pressure  $P_{\mathtt{T}}$  of the carbon dioxide partial pressure PCO2 and water partial pressure PH2O and the hydrogen partial pressure to  $-3 \le \log (P_T/PH_2) \le -0.5$ , performing the annealing in the reducing zone in a ferrite-austenite twophase temperature region at 720°C to 880°C, then cooling by a plating bath and performing the molten zinc plating so as to form a hot-dip galvanizing layer on the surface of the cold rolled steel sheet, then heating for alloying the steel sheet on which the hot-dip galvanizing layer is formed at 460 to 550°C, it is possible to produce a high strength galvannealed steel sheet.
- 2. (original) A process of production of a high strength galvannealed steel sheet as set forth in claim 1, characterized by performing the hot-dip galvanizing in a hot-dip galvanizing bath of a composition comprised of an effective Al concentration in the bath of at least 0.07 wt% and the balance of Zn and unavoidable impurities and performing the alloying at a temperature (°C) satisfying



where, [Al%]: effective Al concentration (wt%) in the hot-dip galvanizing bath

3. (currently amended) A process of production of a high strength galvannealed steel sheet as set forth in claim 1 or 2 superior in bondability, characterized by being performed at an effective Al concentration (wt%) in the bath satisfying the effective Al concentration in the bath of:

 $[Al%] \le 0.092 - 0.001 \times [Si%]^2$ 

where, [Si%]: Si content in steel sheet (wt%)

- 4. (original) A manufacturing equipment of hot-dip galvanized steel sheet comprising providing a hot-dip galvanizing bath and continuously plating a steel sheet by molten zinc, said system for production of a hot-dip galvanized steel sheet for working the process of production of a high strength galvannealed steel sheet described in claim 1 characterized by making the annealing furnace an all radiant tube type annealing furnace and providing an apparatus for introducing into the annealing furnace a gas containing  $CO_2$  in an amount of 1 to 100 wt% and comprised of the balance of  $N_2$ ,  $H_2O$ ,  $O_2$ , CO, and unavoidable impurities.
- 5. (original) A system for production of a hot-dip galvanized steel sheet comprising providing a hot-dip galvanizing bath and continuously plating a steel sheet by molten zinc, said system for production of a hot-dip galvanized steel sheet for working the process of production of a high strength galvannealed steel sheet described in claim 1 characterized by making the annealing furnace an all radiant tube type annealing furnace and providing an apparatus for burning CO or a hydrocarbon in the annealing furnace and producing a gas containing CO<sub>2</sub> in an amount of 1 to 100 wt% and comprised of the balance of N<sub>2</sub>, H<sub>2</sub>O, O<sub>2</sub>, CO, and unavoidable impurities.